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Max headroom: making time and space for Welsh manufacturing SMEs to flourish.

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Abstract

The Welsh manufacturing sector has undergone significant change over the last decade, with new technologies, greater promotion of the circular economy by policymakers, and a competitive environment affected by Brexit, covid and energy price rises, all impacting the business landscape. Consequently, Welsh manufacturing businesses, the vast majority of which are micro, small, or medium-sized enterprises, face issues concerning supply chains, training and skills, innovation, finance, infrastructure, and sustainability. This report summarises a recent study conducted by Swansea University, on behalf of the Federation of Small Businesses (Pickernell et al 2023). The research investigated the issues faced by Welsh small and medium-sized enterprises (SMEs), and identified short-term problems with energy and infrastructure, and difficulties recruiting sufficient qualified staff, as well as a lack of Welsh-based suppliers for many of the resources Welsh SMEs required. The research also highlighted the gap between short-term pressures and long-term vision, but that bridging that gap would allow Welsh manufacturing businesses to place themselves on a more resilient footing, build skills and employment and prepare for future opportunities.

Introduction

Welsh manufacturing has undergone significant changes in recent years, with a greater focus on more advanced manufacturing, technology, and innovation (Welsh Government, 2021). Total employment (excluding self-employed) in manufacturing in Wales in 2021 was 137,400 (10.29% of total employment), 5.6% higher than in 2010 in terms of total numbers of employees (130,100), but marginally lower as a proportion of total employment (10.33%). The proportion of Welsh GVA from manufacturing has also slightly declined from 16.9% to 16.1% between 2010 and 2020. Whilst this can be seen as part of long-term economic trends for developed economies generally, it is also emblematic of

long-term supply chain and consumption problems of the Welsh economy more widely (Pickernell, 2011).

Previous research (Kapitsinis et al. 2019) has also shown that Wales has a similar share of medium-sized firm in enterprise count, and higher contribution to employment and turnover, compared to the UK average, the conclusion being that there is no 'missing middle' in terms of the proportion of medium-sized firms in the business count in Wales. The study by Pickernell et al (2023), however, found that whilst manufacturing in Wales has seen a modest (5%) rise in the total number of Welsh enterprises, this is unevenly distributed, the strongest rise occurring in large firms (with over 250 employees), increasing by over 15%, micro (1-9 employees) and medium sized firms (50-49 employees) increasing by nearly 10%

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each, but small firms (10-49 employees) seeing a reduction of nearly 20%. Consequently, there appears to be a “disappearing middle” of those small firms that lie between the micro and medium-sized firms.

Welsh manufacturing also suffers from the relative peripherality of the Welsh economy. This makes it more difficult to access the major sources of UK finance, including business angels (McCarthy et al. 2014) which tend to be concentrated in the South-East of England. This can also mean Welsh SMEs face greater difficulties accessing the financing they need to grow and invest in new technologies and processes. Another area, which can be linked to issues of perceived peripherality, concerns the historical difficulty faced by Welsh SMEs in accessing public procurement markets, compounded by nearly half of Wales’s own public procurement spend still being with organisations outside Wales (Clear et al., 2020). This shows an area with significant scope for growth as a market for Wales’s manufacturing SMEs, but also tensions and trade-offs for public procurement regimes when dealing with the increasingly prominent issue of community benefit in the Welsh procurement environment (Wontner et al., 2020). Welsh manufacturers have also historically been impacted by relatively poor infrastructure. This includes, but is not limited to, transport links, which tend to focus on connecting Wales up with the broader UK economy rather than within Wales itself. Access to broadband infrastructure, which can limit their ability to connect with customers and suppliers and adopt new technologies, has also been perceived as a particular problem in the past, leading to an extensive Welsh government-led programme of superfast broadband roll out (Henderson et al., 2021).

Moreover, the UK’s exit from the European Union has created significant uncertainty for Welsh manufacturers. This is particularly with regards to trade with the EU, which manufacturing in Wales has been relatively reliant upon (Dickenson et al., 2019), for exports, imports, and access to talent. Simultaneously UK trade within The Comprehensive and Progressive Agreement

for Trans-Pacific Partnership (CPTPP) countries in the post-Brexit trade era has been prioritised (Dickenson et al., 2019), Welsh manufacturers consequently facing significant competition from low-cost CPTPP economies, as well as China and India, which can offer lower-priced goods and services. Simultaneously, exploring new export opportunities through trade agreements and partnerships is also something being encouraged by Welsh Government policy (Welsh Government, 2021). Welsh manufacturers, however, also face a need for skilled workers as the global business environment transitions to a greener economy and the skills landscape is shaped accordingly (Michie et al., 2022). An ageing population, and population growth now dependent on inward migration, as Wales is part of a UK labour market where labour mobility takes place largely within, rather than between, regions and nations are also key factors constraining growth (Michie et al., 2022).

There is, therefore, a tension implied in between the short-term emphasis on generating wealth and jobs and the longer-term goal of transitioning to a more circular economy, with growth within planetary boundaries / slower growth/ or degrowth (Clifton and Walpole, 2023). Data from prior to 2010 (Clifton et al., 2020) identifies that SMEs in Wales are often almost entirely focused on current competition and day-to-day firefighting so this is not a new problem. This prevents them from undertaking effective strategic planning and/or networking to achieve growth and innovation. Additionally, this survey of SMEs in Southeast Wales also showed, however, that where these activities are undertaken, the type of networking and information sought by SMEs from are often not those most associated with innovation and growth, specifically their networking activities were more general, and most respondents did not associate networking with the longer-term objectives and knowledge acquisition more associated with growth.

The focus of the research was therefore to understand the challenges in manufacturing in Wales from a SME firms’ perspective, looking

at commonalities and the priorities as they see them. These views were compared with those as set out by Welsh Government and stakeholders in manufacturing sector, particularly public sector buyers of Welsh manufacturing suppliers. The aim was to compare these views, and to explore how they could be brought together in practice to a wider common horizon.

Method

Semi-structured interviews took place with manufacturing SMEs and key stakeholders covering local government, public sector, higher education procurement, economic

development, and representative bodies, from across Wales. The interviews were carried out between April and June 2023, and the data collected from these organisations was anonymised. Whilst this was a small sample, the firms selected were chosen to enable the gauging of opinions from across as many of the sub-sectors of manufacturing as possible. Similarly, a wide variety of stakeholders were selected to allow a full range of opinions from across different organisational and SME-interaction types. Finally, the sample was identified as covering the whole of the economic geography of Wales.

Table 1: Interviewee Details

Organisation Type	Sector	Location	Size
1. University	Education	South Wales	Large
2. Public Procurement	Health	Wales-wide	Large
3. Public Procurement	Health	Wales-wide	Large
4. Advocacy Group	Manufacturing	Wales-wide	Small
5. County Council	Enterprise and Regeneration	North Wales	Large
6. County Council	Business Support	North Wales	Large
7. SME	(30) Manufacture of other transport equipment	Southeast Wales	Small
8. SME	(32) Other manufacturing	Southeast Wales	Micro
9. SME	(22) Manufacture of rubber and plastic products	Southwest Wales	Small
10. SME	(24) Manufacture of Basic Metals	Southwest Wales	Small
11. SME	(25) Manufacture of fabricated metal products, except machinery and equipment	Southeast Wales	Medium
12. SME	(28) Manufacture of machinery and equipment N.E.C.	Southwest Wales	Medium
13. SME	(33) Repair of electrical equipment	Southeast Wales	Medium
14. SME	(30) Manufacture of other transport equipment	Southwest Wales	Micro
15. SME	(10) Manufacture of food products	Mid Wales	Medium
16. SME	(25) Manufacture of fabricated metal products, except machinery and equipment	Southwest Wales	Medium

Note: Figures in parentheses denote SIC code

Findings and Discussion

The results of the interviews are outlined below, broken down into several sub-issues around objectives, and supply chain, innovation, finance, infrastructure, and sustainability issues. For each sub-section a summary table shows the top 3 issues identified by the interviews, both for SMEs and broader stakeholders, the subsequent discussion focusing on the specific issues of importance identified but also the key areas of agreement and divergence between the two groups. It is important to note that in each of these the responses were to open questions rather than a closed list of possibilities, and so reflected the concerns firms identified for themselves unfiltered by interviewer bias.

SMEs are more likely to focus explicitly on growth as the primary objective, often seeing innovation (in various forms) as a vehicle for this, whilst acknowledging the need for staff recruitment to facilitate, and the difficulties the current situation creates. The following quote summarises this: -

“We have a 3–5-year plan to grow the business from £5m to £8m, which will require us to recruit an additional 12 engineers.”

Generally, stakeholders place much more emphasis on sustainability, with training as a facilitator, but also exporting (which many SMEs do not emphasise because they do not export / have faced issues caused by Brexit so have been dissuaded from prioritising). Summarising, one stakeholder involved in supporting SMEs, said:

“SMEs tended to be just hanging on, needing help and with less viability. Their aims over the next few years must be to get the right workforce, dealing with the skills gaps they currently face, and upskilling the workforce they already have. They also need to deal with the consequences of Brexit in terms of the issues around exporting, which are a concern, and where they need additional guidance and support. Moving towards carbon zero is also an objective, with a need to share best practice in terms of supply chains and the circular economy.”

More broadly, the interviews highlight the narrower current focus for SMEs, in an environment where short term survival is less certain than previously. One SME's quote summarises this:

“I've got to find 150,000 pounds worth of cost savings, just to stand still, and R&D disappears, and when your investment in people stops, they start to disappear”.

Stakeholders have a longer-term focus, more likely influenced by government policy concerning sustainability and net zero. Typical of this:

“In our purchasing, we are therefore looking at both value-added and the organisational target of net zero by 2035, which means we need to leverage our suppliers more and more going forward.”

Table 2: Aims and objectives of organisation over the next few years: (Top 3, 1 is top)

Objective	Firms	Stakeholders
Growth	1	
Innovation and knowledge sharing	2	
Training		=2
Recruitment	=3	
Sustainability		1
Use of Technology	=3	
Exporting (including dealing with issues caused by Brexit)		=2

Table 3: Most important issues, deficiencies, and future requirements with regards to supply chains and customers (Top 3)

Issues:	Number of firms	Number of stakeholders
Input costs (including staff and land)	2	=2
Lack of local (Welsh) suppliers	1	1
Automation / ICT		=2
Brexit Costs	3	

Overall, however, (and as articulated further below) this appears to be a matter of emphasis rather than of fundamental disagreement.

In terms of supply chains there is consensus between firms and stakeholders on the lack of local Welsh suppliers as a major issue, with a need to facilitate development in this area, to assist in increasing the resilience of Welsh manufacturing as well as to bolster multiplier effects. As one SME stated:

“In the past quality took the lead for us. We were not the cheapest, but we were very customer focused. Now it’s all about cost. ...The Welsh Government need to make sure Welsh money stays in Wales. The supply chain is bleeding out the economy- with money going to competitors.”

SMEs (and stakeholders to a lesser extent) also highlight input costs as of major importance. The areas identified, raw

materials, components, energy, land, and staffing costs, related to skills, and sustainability, are discussed further below. Generally, difficulties caused by Brexit could be seen as part of the wider suite of issues, not least the increased emphasis on price and costs incurred by longer delivery times:

“For customers in Europe, Brexit is an issue. It has become more complicated, and pricing is now more of an issue, because we are not as competitive. Our customers want a price competitive product to move into, so we need to take cost out of the offering. Instead, we have lost market share because of the additional costs and complexity of shipping, delays. As a result, they’ve opted to go to a locally sourced alternative, now that it takes 10+ days, not 3 days for delivery after an order. Our sales have halved in Europe, though Covid has also affected this.”

Table 4: Most important issues, deficiencies, and future requirements with regards to skills and innovation (Top 3)

Issues:	Number of firms	Number of stakeholders
Poaching of trained staff (including lost knowledge)		=1
Lack of skilled workers (recruitment)	=2	=1
Procurement skills		=1
Need to train	1	
Need for industrial strategy for skills	=2	

In terms of skills, there was a consensus about the seriousness of the situation, but different strategies being employed. The lack of skilled staff, poaching activities by rival firms, and necessity (but also difficulty in current market conditions) of paying staff more to retain staff were all mentioned by SMEs and stakeholders, with increased in-house training being the most popular solution for SMEs.

“There is a deficit in the job market regarding skilled workers, and if there is a well-established candidate, they demand higher wages. So, (the organisation) offer higher salary to workers with minimal experience. To offset this (deficiency of skills and experience) (the organisation) have provided training in-house to the new employees of the organisation.”

and

“In the past there would have been large companies with large apprenticeship numbers and management training locations. These companies do not exist now, so whilst high level leadership training is available, training at the next level down is missing. As a result, succession planning is also a big

issue as the skills and experience are not there.”

Whilst SMES tended to focus on skills at the general level rather than specific skills, stakeholders identified specific areas of leadership, sustainability, and procurement as key to SME development.

“The major deficiency we are finding is in terms of carbon awareness and carbon literacy, a problem that is admittedly wider than just SMEs. Our decarbonisation ambitions need us to know where materials come from, and for the knowledge to trickle down to SMEs from our larger suppliers to enhance greater understanding and the need for upskilling. In terms of innovation a lot is already happening, but we need to find ways to encourage more, particularly in terms of problem-solving pull innovation¹ rather than the firm having a great product / innovation that they want to push².”

Again, this seemed to emphasise a more immediate, short-term focus for many of the SMEs, symptomatic of market uncertainties and pressures. Meanwhile the stakeholders emphasised skills sets more likely to bear fruit in the longer term.

Table 5: Most important issues, deficiencies, and future requirements with regards to innovation (Top 3)

Issues:	Number of firms	Number of stakeholders
Customer led; demand pull innovation as key USP	=1	=1
Lack of investment by customers in latest innovation (including smart factories and sensors)		=1
Lack of finance for SME innovation (including Difficulties obtaining grant finance because of Brexit induced cross subsidisation of university research)	=1	
More supportive government policy	=1	=1

¹ Innovation solutions driven by customer identified needs / problems.

² Innovations driven by firms onto their customers.

The discussion over innovation was much less pronounced than for skills. SME innovation activities tend to be reactive, customer led, demand pull in nature.

"In terms of innovation for us this is incrementally focused not radical. Customers come to us, our products being a component not the whole for our customers' products. This makes our innovation demand driven, our customers telling us the trends. So, we are listening to customers and being reactive, but needing to be more detailed as customers have very specific requirements."

Even where they were more proactively sustainability focused, there was also importance placed on reducing costs: -

"In components (and the final product) we look at the failures in the industry and look to improve by making the product lighter, production more efficient, and the product more suitable for customers. For example, we managed to reduce materials used in one part of the product, which has made a mega improvement in sustainability, making the product lighter and cheaper and production more efficient. We've also tried 25% recycled aluminium, which has proved to be stronger than newly made, meaning we can reduce the amount of material used, also making it cheaper".

The lack of customer investment in the latest innovations was also seen as a hindrance by some.

"There was a piece of machinery that we repaired where the manual we used was 50 years old, as they didn't want to have to replace a multi-million-pound piece of kit because of a small repair issue. We've even had some companies asking for our equipment to put in their museum! This is part of a broader issue in UK industry, that capital replacement isn't as quick as it should be".

Access to finance for innovation was an issue for several businesses:

"In terms of innovation, finances dictate what we are able to do."

There were also perceptions for some that because of Brexit, funding that could have gone to SMEs was going to larger businesses and universities to compensate for lost EU funding.

"In terms of innovation, there is a need for (relatively small amounts of) money, but the grants process is very complicated, time consuming and arduous...Large companies get the vast majority of government money because of Brexit, to keep them in the UK, or it goes to universities to cover the funding lost because of Brexit, meaning that small companies lose out."

Table 6: Finance Issues (Top 3)

Issues:	Number of firms	Number of stakeholders
Finance for renewing old equipment		=2
Not in a position to increase debt	1	=2
Increasing interest rates on existing debt / lack of funds because of increasing costs		=2
Being forced to look to crowd or joint venture to finance growth		
Lack of cash flow	=2	=1
Finance not an issue because firms growing cautiously (+ need for longer term contracts) or have great ideas and no money		=1
Difficulties obtaining grant finance (e.g., because of Brexit induced cross subsidisation of larger businesses)	=2	

This could also be seen in terms of the discussion over finance, where there was a general lack of importance placed on external finance, partly because the current environment had created a cash flow issue for many firms and a focus on only using internal funding,

"We are not able to further increase debt. Instead, we have focused on product lines that are profitable, so we can invest those profits back into the business."

There was also perceived risk aversion from banks which led firms that were seeking external finance to look at alternative sources.

"In terms of access to cash, I have to say the banking fraternity have not been very supportive. They are risk averse and became more risk averse post-Brexit and Covid. They talk about supporting green businesses... but I'd say they have short arms and deep pockets. We've got about 2,000 customers in about 50 countries, huge potential. But unlocking this means some of the things we want to do just needs us to borrow a bit of cash. The Development Bank of Wales are a bit more supportive, but the main banking support that we have, our main clearing bank, are not very supportive at all."

The discussion of infrastructure also highlighted a degree of difference between SMEs and stakeholders which could again be seen in terms of the difference in timeframe focused upon. There was consensus around the lack of suitable buildings / land for expansion as of key relevance for both SMEs and stakeholders. One quote that summarised the frustrations around this was:

"Affordable space is key issue... There is a lack of affordable industrial space. Business Wales send us to Business in Focus BUT they have offices NOT industrial units. There is a shortage of industrial units. We need subsidised space to facilitate our growth so that in a couple of years we can afford to leave that space and the next (business) can move in."

Concerns over the availability of energy were relevant to others.

"Costs are currently a key issue. Energy in particular is costing £1m a year more than last year."

And

"It's not cost effective or expedient for individual units on the estate to invest in an energy infrastructure."

Table 7: Infrastructure issues (Top 3)

Issues:	Number of Firms	Number of stakeholders
Suitable land / space for expansion	= 1	=2
Building costs	= 1	
Building regulations	=3	
Lack of suitable energy infrastructure	=3	
Lack of energy security	=3	
Road infrastructure		=2
Public transport infrastructure (including rail)		=2
ICT infrastructure		1

For the stakeholders, broader transport, including public transport, and ICT infrastructure were more strongly focused upon: -

“In terms of infrastructure we are moving to a cloud-based IT system from a server, which may have unintended consequences for SMEs. In terms of the broader infrastructure issues, the road links between north, south, and mid Wales are clearly an issue, so those on or near the M4 corridor are advantaged for distribution and logistics. This is a highlighted long-term issue, as is the rail network and getting the workforce to work is another obvious issue, so there are steps in the right direction (e.g., metro helping get people to work)”

Finally, regarding sustainability and circularity, whilst stakeholders had placed more emphasis on this, there was consensus with SMEs (who also understood and were supportive of the sustainability agenda) over the need for government action to remove barriers to SME take-up in this area. Several firms put sustainability at the heart of their business models and believed it to be a USP of the

business itself. There was also recognition, however, that the agenda was often driven by the wider supply chain, including that outside the UK, and that SMEs were often reliant on sustainability activities of outside organisations to fulfil their sustainability and circularity requirements.

“We’re trying to do the right thing, but we are reliant on others. The system needs to be efficient and incentivised financially to reduce problems. It’s a good idea and it should be worth it BUT the real world means cost is so important.”

There is a consensus around the current inadequacy of government activity, where issues over Feed -in Tariffs, energy infrastructure and difficulties working with the public sectors, meant that there was frustration that opportunities that were identified could not be exploited.

“Our energy use is already low, and whilst we could put solar PV in tomorrow, the fact that the feed in tariff is 6p and we are charged 45p per kwh means UK government is giving the wrong message by allowing the energy companies to do this and by stopping incentives.”

Table 8: Issues, problems, opportunities, and actions with regards to sustainability and circularity (Top 3)

Issues:	Number of firms	Number of stakeholders
Sustainability driven by customers / suppliers from outside firm’s control including abroad		=1
Local Partnerships / networks for recycling and knowledge sharing		=1
Government action inadequate (e.g., feed in tariffs, energy infrastructure, difficulties working with public sector)	2	3
Sustainability as heart of business model and USP	3	
Firms have good knowledge of the issues and are supportive	1	

Stakeholders saw potential solutions not only in better government action but also in the development of local partnerships and networks for recycling and knowledge sharing.

“The major challenge for SMEs is the costs of sustainability. Recycled goods tend to be more expensive, there is an infrastructure required for net zero, which needs to be considered, and solar panels require capital investment. Our organisation is in transition to net zero, and has solar panels, but the issue for SMEs is how they start this journey, as there will be a long lead time unless they have knowledge of renewable energy, plus investment in infrastructure.”

Conclusions and Recommendations

The research clearly identified the challenging economic environment facing small firms. This has the effect of necessarily narrowing their focus to day-to-day “firefighting”, making long-term planning difficult. Stakeholders take a longer-term view, more likely influenced by trends in government policy concerning sustainability and net zero. This is, however, a matter of emphasis rather than of fundamental disagreement and there are several areas where both SMEs and stakeholders held similar views. Most obviously, the lack of Welsh-based supply chains is a key issue identified by both firms and stakeholders, playing an important role in the amount of business won by Welsh firms, the strength of the economy, and employment. Skills shortages were another area of consensus, but with firms focused on more short-term basic skills areas and stakeholders focused on longer term leadership and sustainability-related skills. Another strong area of agreement between firms and stakeholders is concerned with the lack of suitable buildings/land for expansion to meet growth aspirations, as well as availability and cost of energy.

Regarding sustainability and circularity, stakeholders placed more emphasis on this, but there was consensus with SMEs (who also understood and were supportive of the sustainability agenda) of the need for

government action to remove barriers to SME take-up. Issues over Feed-in Tariffs, energy infrastructure and difficulties working with the public sector, meant that there was frustration among SMEs that opportunities identified could not be exploited. Stakeholders saw potential solutions not only in better government action but also in the development of local partnerships and networks for recycling and knowledge-sharing.

Firms specifically also identify energy, land, staffing, and Brexit (lost export opportunities and/or supply chain disruption and/or staffing issues). Innovation is mainly customer-led and reactive, and consequently often currently focused on cost reduction, with finance availability often perceived as limited due to post-Brexit loss of funding sources. More generally finance is perceived as less of an issue for SMEs, but mainly because of the current uncertain situation. For some there is less demand due to the post-Covid crisis inducing a wish not to take on more debt. For other businesses in the post-Covid period, they do not wish to add to already high debt levels, whilst for others the supply of finance, particularly from banks, is a barrier to their growth objectives, causing alternative debt and equity solutions to be explored.

This report also shows that for priorities to be effectively set to increase the benefits from a healthy Welsh manufacturing SME sector, policy makers need to consider the environmental contexts that have and continue to affect such SMEs and the Welsh economy more broadly. In the short-term, the focus should, therefore, be on giving certainty where possible in areas deemed key by SMEs. Skills, land, and buildings are all areas where there is high demand from SMEs, and where Welsh Government can swiftly flex the levers at their disposal to reduce barriers for small firms. In terms of skills, both higher education and further education can play important roles, leveraging the skills they have gained during the Covid period for speedy creation of flexibly delivered (with strong reliance on on-line) short, demand-led courses. These should be co-created with small business representatives from across sectors, to ensure relevant design.

In terms of land and buildings, an assessment of the resources available must take place and how they can quickly be brought into use, allowing manufacturing firms the space they need to grow.

In the medium-term, energy access, security and affordability is key to further alleviating the pain Welsh manufacturing SMEs are facing. As stewarded by UK and Welsh governments and their agencies, the development of stronger Welsh supply chains, would increase the resilience of the SME-growth entrepreneurial ecosystem. This will allow small firms in the manufacturing sector to better exploit the opportunities that the circular economy offers, because of the greater potential to network solutions within a coherent ecosystem. Protecting the supply chain in Wales should be a top priority for both governments. The evidence from the interviews with firms suggests the need for higher education institutions to link more effectively with the manufacturing sector, to deliver graduates with a better mixture of practical skills and more

relevant innovation and leadership qualities that firms can access. This therefore suggests a medium-term focus is needed to adjust the higher education offer to improve linkages with small firms in the manufacturing sector, provide work experience and assessments as part of learning pathways and support a two-way interchange of knowledge that will link to longer term aspirations.

Finally, developing the long-term sustainability and circularity agenda will generate opportunities for Welsh manufacturing to develop more resilient SMEs with greater potential for survival, development, and growth. The Welsh and UK Governments must deliver a greater focus on innovation a fairer provision of finance in Wales as compared to other UK regions and nations. This will require specific policy actions, in the short, medium, and long term, which the FSB report will articulate in order to bring this important message to Welsh Government, the Senedd and beyond.

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